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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/727,088

12/02/2003

Reed J. Blau

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04/14/2006

TRASKBRITT, P.C.

P.O. BOX 2550

SALT LAKE CITY, UT 84110

EXAMINER

HWU, DAVIS D

ART UNIT

PAPER NUMBER

3752

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,088

Applicant(s)

BLAU ET AL.

Examiner

Davis D. Hwu

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-93 is/are pending in the application.
- 4a) Of the above claim(s) 26-56 and 83-93 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 57-82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/13/05, 7/25/05, 2/9/05, 3/22/04
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 17, 18, 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ludwig et al.

Ludwig et al. shows a gas generant formulated to pyrotechnically produce an inert gas mixture and a heat management system to ignite the gas generant in which the gas generant can be used in a fire suppression system. The device further comprises an igniter composition to produce heat to ignite the gas generant and produce at least one gaseous combustion produce and at least one solid combustion product when combusted as recited in claims 3 and 4, wherein the amount of particulates or solid combustion product is minimal as recited in claim 5 (Column 11, lines 29-59).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig et al. in view of Lundstrom et al.

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Lundstrom et al. teaches a pyrotechnic gas generant comprising a scavenger to remove undesirable combustion products (Column 5, lines 58-63) and gas generant compositions which comprise slag formers which produce slag as a combustion product as recited in claim 10. Lundstrom et al. also teaches a gas generant comprising an oxidizer, a fuel, and a binder as recited in claim 12. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Ludwig et al. by incorporation into the device a scavenger as taught by Lundstrom et al. to remove various undesirable combustion products. The limitation set forth in claim 7 would have been a matter of design choice depending on product specifications. The inert gas mixture of Ludwig et al. comprises nitrogen and water (Column 12, lines 27) as recited in claim 11.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig et al. in view of Taylor et al. and Moore et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Moore et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Ludwig et al. comprising a combination of the elements as taught by Taylor et al. and Moore et al. since Taylor et al. and Moore et al. teach such elements for forming a gas generant are known in the art and the combination of these elements would properly form a gas generant.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig et al. in view of Taylor et al. and Hinshaw et al.

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Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Hinshaw et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate and polyacrylamide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Ludwig et al. comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are known in the art and the combination of these elements would properly form a gas generant.

7. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig et al. in view of Knowlton et al.

Knowlton et al. teaches a gas generant comprising a phase change material including lithium nitrate, sodium nitrate, and potassium nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included into the gas generant of Ludwig et al. a phase change material comprising the various nitrates as recited in order to manage the heat.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig et al.

The limitations of claim 22 would have been matters of design choice depending on the systems requirements for a particular application.

9. Claims 57-65 and 72-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig et al. in view of Lundstrom et al.

Ludwig et al. shows a gas generant formulated to pyrotechnically produce an inert gas mixture and a heat management system to ignite the gas generant in which the gas

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generant can be used in a fire suppression system. The device further comprises an igniter composition to produce heat to ignite the gas generant and produce at least one gaseous combustion produce and at least one solid combustion product when combusted, wherein the amount of particulates or solid combustion product is minimal (Column 11, lines 29-59). Lundstrom et al. teaches a pyrotechnic gas generant comprising a scavenger to remove undesirable combustion products (Column 5, lines 58-63) and gas generant compositions which comprise slag formers which produce slag as a combustion product as recited in claim 10. Lundstrom et al. also teaches a gas generant comprising an oxidizer, a fuel, and a binder. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Ludwig et al. by incorporation into the device a scavenger as taught by Lundstrom et al. to remove various undesirable combustion products. The inert gas mixture of Ludwig et al. comprises nitrogen and water (Column 12, lines 27). The device of Ludwig et al. and Lundstrom et al. is capable of carrying out the recited methods. The limitations of claim 62 would have been matters of design choice depending on the systems requirements for a particular application.

10. Claims 66-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig et al. in view of Lundstrom et al. as applied to claim 65 above, and further in view of Knowlton et al.

Knowlton et al. teaches a gas generant in which the igniter comprises boron and potassium nitrate to safely initiate combustion of the gas generant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to

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have modified the device of Ludwig et al. and Lundstrom et al. by making the igniter comprising boron and potassium nitrate as taught by Knowlton et al. to safely initiate combustion of the gas generant. The amounts of the elements as recited would have been matters of design choice.

11. Claims 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig et al. in view of Lundstrom et al. and further in view of Taylor et al. and Hinshaw et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Hinshaw et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate and polyacrylamide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Ludwig et al. and Lundstrom et al. comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are known in the art and the combination of these elements would properly form a gas generant.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent to Italiane et al. is pertinent to Applicant's invention.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis D. Hwu whose telephone number is 571-272-4904. The examiner can normally be reached on 8:00-4:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can

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be reached on 571-272-4919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Davis Hwu


DAVIS HWU
PRIMARY EXAMINER